

## Neural correlates of prosodic measures in adults with aphasia and/or apraxia: A lesion-behavior mapping study

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### Abstract:

The purpose of this study is to identify regions of brain injury associated with prosodic impairment in stroke survivors with speech sound disorders. Word syllable duration was measured in multisyllabic words as an index of slow speech rate commonly associated with apraxia of speech, and percentage of segments produced with distortions was coded to measure articulatory impairment. Lesion proportion was identified for several brain regions believed to be involved in speech and language. Regression analysis was used to identify brain regions that best predict word syllable duration. A stepwise regression analysis found that, after the effects of segment distortions were accounted for, damage to three brain regions best predicted word syllable duration: putamen, supramarginal gyrus, and corticospinal tract. Results will be interpreted in the context of past lesion behavior studies and neural modelling research.